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DISCOVERIES AND CURRENT EVENTS
IN WORLD PHYTOPATHOLOGY

Algeria : Plant Diseases observed in March, 1927 (1).

A disease of the haulms of the potato (*Solanum tuberosum*) due to *Sclerotinia sclerotiorum* (Lib.) Schröt. This disease had not been previously notified in North Africa. It caused some damage in crops near Algiers (Commune of Alma) in March, 1927 following the cold rainy winter of 1926-27. The same parasite attacked the roots of *Lupinus albus* in the same district.

(2) A disease of artichokes (*Cynara Scolymus*) has caused fairly serious loss in the Mitidja plains near Algiers. The disease, which only attacks two year old plants, appears as a stunting of the shoots, inducing

(1) Communication from the official correspondent to the Institute, Dr. René MAIRE, Professor of General and Applied Botany at the University of Algiers.

an appearance in the foliage resembling that of the « frisolée » of the potato. My colleague Mr. KILLIAN and I have studied the diseased plants without being able to reveal any visible parasite.

The flower heads however, which are scanty, produced by the diseased plants are very sensitive to frost and to bad weather generally, and the scales (or involucre bracts) are then attacked by a species of *Sphaerioidaceae* hitherto undescribed, belonging to the genus *Diplodina* (*D. Cynarae* n. sp.), which induces blackening and mouldiness of the flower heads.

Belgium : Parasitic Fungi recently observed for the first time on Cultivated Plants (1).

PERONOSPORACEAE. — *Phytophthora Syringae* Kleb. This fungus has been observed at Brussels, Grand Bigard, and Wetteren. It produces bud-rot on *Syringa vulgaris*, especially in hot-houses. The damage done is sometimes considerable.

Pseudoperonospora Humuli (Miyabe and Takah.) Wils. The appearance in Belgium of the Japanese hop-mildew seems to date from 1924, although its presence was not officially notified until 1925. It was quite probably introduced from England with hop-plants.

The mildew attacks the hop at different periods of its growth. In spring the shoots are checked in their development ; later as a result, the branchings of the stalk remain short and thickened, with very short internodes and with a loss of volubility. The leaves when developed are covered with angular brownish-red spots while the cones attacked show reddish areas on their bracts. The crop is sometimes badly damaged.

The disease has already attacked the different hop-growing centres of the country.

In 1926, after a serious attack in spring, the progress of the parasite was checked in July by a dry period. It started again on a serious scale in autumn though as a rule the damage was not considerable.

PLEOSPORACEAE. — *Didymella Lycopersici* Kleb. This parasite, which produces canker or stem-rot in the tomato, has certainly existed in Belgium for some years, but it has only recently been recognized.

It was probably introduced from Holland where it has already been rampant for a long time. Sometimes it causes serious damage.

POLYPORACEAE. — *Trametes Pini* Fr. A red rot on the trunk of Norway spruce, due to this fungus and new to the Belgian flora, has been observed in certain cantons of Hertogenwald, on the eastern frontier of the country.

The infection arises in wounds caused by stags. The spores of the parasite must have been brought by the latter from the resinous forest stocks in the neighbouring German territory.

SPHAERIOIDACEAE. — *Phoma linicola* E. Marchal and G. Verplancke. This species produces serious rotting at the base of flax-stalks. It would

(1) Communication from the officia. correspondent to the Institute, M. EM. MARCHAL, Director of the State Phytopathological Station at Gembloux.

seem to be identical with that noted but not described by the phytopathologist PETHYBRIDGE under the same conditions in Ireland.

Phoma thuyana v. Thüm. This parasite destroyed the ends of Thuya shoots at Eghezée (Namur), causing considerable damage to the trees.

Septoria Azaleae Vogl. This species, described in 1890 by VOGLINO, has become a serious disease of the azalea. It covers the leaves with small brown spots which sometimes cause a general fall of the foliage. It was identified for the first time in 1925 on samples taken at Meirelbeke and now seems to have spread through the whole of the Ghent district, which is the centre of the cultivation of azaleas under glass in Belgium.

MELANCONIACEAE. — *Colletotrichum omnivorum* Halst. This fungus attacks Aspidistra, producing a true necrosis of the petioles, sometimes actually covering the leaves with great discoloured patches, fringed with brown.

Coll. Lini Pethyb. and Laff. This pest, which is particularly harmful to young flax plants, has been observed to occur sporadically since 1925 both in Flanders and in Hesbaye.

DEMATIACEAE. — *Cercospora concors* Casp. This parasite of the potato, which reveals itself by vague discoloured spots on the leaves, showing below a light greyish pubescence, seems to be very rare in Belgium, and had not been notified before 1924.

STILBACEAE. — *Graphium Ulmi* Schwarz. MARCHAL has found this fungus constantly in the vessels filled with tyloses of the last annual layers of trees attacked by the formidable disease which for several years has been doing considerable damage to elms in Western Europe.

Its part in the etiology of the disease, needs more definite determination.

Italy: *Sphaeropsis Pseudo-Diplodia* in Piedmont (1).

An outbreak of *Sphaeropsis Pseudo-Diplodia* (Fuck.) Delacr. on the branches and fruit of the apple has been notified in Piedmont and especially in the following districts: Garesio, Pinerolo, Rivoli, Bagnolo, Giaveno, Turin and Lucento.

(1) Communication from the "R. Osservatorio di Fitopatologia" of Turin, transmitted by the "R. Stazione di Patologia vegetale" of Rome, official correspondent to the Institute.

VARIOUS QUESTIONS RELATING TO PLANT PROTECTION IN THE DIFFERENT COUNTRIES

Algeria : Situation at the *Doclostaurus maroccanus* Breeding Places in the three Departments during March, 1927 (1).

ALGIERS DEPARTMENT. — The following mixed communes have been declared attacked: — Aïn-Boucif, Aumale, Boghari, Chellala, Sidi-Aïssa.

Aïn-Boucif. — Young *Doclostaurus maroccanus* insects hatched out on the 18, 21 and 29 March in the douars of Tillery, Birine, Bellehar from the egg deposit zones marked down in 1926. Despite the collection of several quintals of egg-capsules the attack shewed signs of proving extremely serious. Counter-measures have been taken since the appearance of the young insects, and consist of spraying with 12-15 % cresyl solution and burning the locusts in situ on alfa heaps. A destruction experiment is about to be made using sulphuric acid applied by a weed sprayer.

Aumale. — No hatching has yet been notified, though the marked egg deposit zones are under close observation.

Boghari. — Hatching has been notified in the douars of Boughzoul, M'Fatah, Uuled Mareuf and Aziz on the 10, 18, 23 and 31 March. The question has been taken very seriously in this mixed commune and the whole surface of the soil has been turned in over an area of about 500 ha.. Hatchings have been fewer where this has been done. Moreover they are much more numerous in districts which cannot be ploughed up despite the collection of egg-capsules in the winter. The control measures are very well organized and give excellent results, the young insects being destroyed as they hatch out by means of cresyl spraying. This counter-measure, which is becoming general, is entirely satisfactory.

Chellala. — No hatching in this commune, otherwise only slight infection.

Sidi-Aïssa. — Young insects made their appearance in the douars of Selamates and Sidi Hadjères on 24, 25 and 26 March. Hatchings were very numerous and threatened a very serious attack. In this sparsely populated commune control measures will be difficult owing to the widely separated egg deposit zones. Burning on alfa heaps is, at present, the most simple method of control and in fact the only one possible, as water difficulties preclude cresyl spraying.

(1) Communication from the Governor General of Algeria to the President of the International Institute of Agriculture.

CONSTANTINE DEPARTMENT. — The following communes have been declared attacked : — An-el-Ksur, Aïn-M'Lila, Belezma, Les Bibans, Chateaudun-du-Rhumel, Les Eulma, Les Maadid, Les Rirka, M'Sila, Tocqueville P. E.

Les Bibans. — A few hatchings of *D. maroccanus* in the douar of Mansourah on 16 March. Special squads have been organized for the speedy extermination of the young locusts, Though not badly infected itself it is seriously threatened by the commune of M'Sila where very extensive egg deposit areas are close to the boundary between the two communes.

Les Maadid. — Numerous hatchings have taken place, the first on 19 March in the douar of Mekarta which is badly infected.

Control measures are in full swing and large amounts of cresyl have already been used. Burning on alfa heaps is to be practised in waterless places.

This commune like that of Les Bibans bounds M'Sila and will have to protect itself against young insects coming from that quarter. Despite the collection of great quantities of egg-capsules, the attack seems fairly serious in this district and crops are in danger.

M'Sila. — Hatchings have been notified from the places called Zerga and Dia, Aïn-Saad, Benhectoum and Chorfa in the douar of Ourthène, as from 12 March ; the egg deposit areas were not marked in this commune, which seems to be one of the most seriously affected. Control measures, consisting of cresyl spraying and burning on alfa are in progress.

ORAN DEPARTMENT. — The communes of Berthelot P. E., Frenda, La Mékerra, Saïda and Le Télagh are infected, though hatching has taken place only in Le Télagh.

Le Télagh. — Hatchings have taken place in the territory of Slissen at La Maherta.

Ten special squads have been organized in the forests, but they are insufficient in places and allow the passage of young insects which are at the edge of the crops.

The situation is critical.

Sierra Leone : The Locust, *Zonocerus variegatus*, L. (1).

General. — The account refers to the Experimental Farm at Njala.

Damage. — Difficult to estimate, certainly considerable, especially in the dry season.

Development. — Young hoppers are first to be observed towards the end of September. Others were hatched out in large quantities in late November and December, the difference in date of hatching being

(1) Extract of Communication from the official correspondent to the Institute, E. HARGREAVES, Entomologist, Lands and Forests Department, Experimental Farm, Njala, Sierra Leone.

possibly due to the variation in level of breeding places which affects the dryness of the earth surrounding the eggs. First egg laying is probably in January. Apparently there are normally 2, sometimes 3 generations in a season.

Breeding places. — Eggs were deposited in the ground under undetermined conditions of environment. These areas appeared to be localised.

The hoppers were observed to move gradually always in an Easterly direction. Notes will be made in the present dry season to determine whether they return from that direction and also whether the eggs are deposited in the same areas as before, as it is suggested as possible that the same areas are used year after year.

Food plants. — The hoppers shewed special preference for the Christmas Tree (*Alchornea cordifolia*, Mull. Arg.), which grows in the bush, and for the weed *Ageratum conyzoides*, Linn., very common in the open. Use can be made of the attraction of the latter plant for trapping the locusts.

Enemies. — This particular species is remarkably free from enemies and is refused by poultry.

Methods of Control. — Collection of hoppers in the evening or early morning by knocking them off the tips of high growing plants and small bushes, where they congregate at this time, into a bucket containing an inch or two of water. The operation is started immediately after their appearance in numbers in October. Fairly good results were got by inserting tapering sticks about $\frac{1}{2}$ - $\frac{1}{4}$ of an inch thick among the low growing crops at intervals of about 9 feet with about 4 feet showing above ground at an incline of 20°-30° from the vertical. This facilitated collection of hoppers.

Use of Poison. — Paris green was used in conjunction with various bait containing some locust attractant, such as salt, honey, or juice or rind of citrus fruits, lime juice however not proving sufficiently attractive. The following mixture was finally used on a large scale :— sawdust 1 bushel (approx. 17 bis), Paris green 1 lb, salt 2 lbs, 5 quarts of water to give a crumbly consistency.

Its application was a complete success, full effect being seen about 3 days afterwards. By successive applications, when necessary, all the farm crops, besides certain other areas treated, were eventually freed from locusts.

Reinfestations necessitating further treatment came from the semi-bush (uncultivated land) around the bananas and suggest the undesirability of having any such ground among cultivated areas.

The best method of application is very thin broadcasting at the rate of 1 bushel for 2 acres, and 1 man should do 1 acre per hour.

It is probable that half the quantities of salt and of Paris green would suffice and further experiment is being made on this point.

Cannibalism. — This trait was determined by experiment and it is hoped that it may be useful in cases of reinfestation where poison has been previously used.

Remarks re. Citrus Trees. — After treatment of some of the larger citrus trees the few remaining hoppers were successfully sprayed with lead arsenate, which also dealt with other defoliators.

The hoppers prefer lemon to the other citrus varieties. In no other case was supplementary treatment needed.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Algeria (1). — Under an Order of the Governor General of Algeria dated 7 March 1927, the sum of ten francs per hour is payable by importers who desire that the sanitary inspection and, where necessary, the disinfection of plants arriving on a Sunday or other holiday should take place on the same day. (*Journal officiel de l'Algérie*, Alger, 1927, 1^{ère} année, n° 11, p. 120).

Australia. — In order to prevent its introduction into Australia the *Popillia japonica*, Newm. [Japanese beetle] has been pronounced — in the Quarantine Proclamation No. 164 — to be injurious to agriculture according to the terms of the Quarantine Act. (*Commonwealth of Australia Gazette*, Melbourne, 1926, no. 118, p. 1).

Austria. — By Order B. G. Bl. No. 18 dated 31 December, 1926 of the Federal Ministry of Finance in conjunction with the Federal Ministry for Agriculture and Forestry, the import and transit of living plants, slips, cuttings and fresh plant waste, and also of barrels, cases and similar objects used for the carriage of such goods or waste materials from America, Australia, China, Hawaii and Japan is declared permissible into Austrian territory only on condition that the goods are accompanied by an official certificate, stating that they have been examined by an expert of the phytopathological Service and found free from San José scale (*Aspidiotus perniciosus*). This official certificate must be issued in the country of origin of the goods and in the case of fruit can also be issued in the country from which the parcel of goods is sent, when not identical with the country of origin.

It is further laid down that the importation and transit of fruit trees and fruit bushes including wild stocks, cuttings, slips and layers and the

(1) The countries are arranged in the French alphabetical order.

wrappers used for carrying them, is only permissible from all countries when these goods are accompanied by a certificate of the official phytopathological Service of the country of origin, stating that the goods have been submitted to expert examination and have been found free from all dangerous plant diseases and pests. All such parcels coming from America, Australia, China, Hawaii and Japan must also be expressly certified as free from San José scale. The certificates must be drawn up in the language of some European State or accompanied by a duly certified translation.

The Order of the former Ministries of Agriculture, the Interior, Trade and Finance, R. G. Bl. No. 107 of 15 July, 1882 for the prevention of the introduction of vine phylloxera [*Phylloxera vastatrix*] is not affected by the above Order. The Orders of the former Ministries of Agriculture, the Interior, Finance and Trade, R. G. Bl. No. 54 of 20 April, 1898, and R. G. Bl. No. 22, of 16 January, 1909 regarding the prohibition of the importation of living plants and of fresh fruit infected with San José scale from America and Australia is however hereby superseded. (*Bundesgesetzblatt für die Republik Österreich*, Wien, 1927, Jahrg. 1927, 4. Stück, S. 87-88).

* * The Order of the Federal Ministry of Agriculture and Forestry, B. G. Bl. No. 39, of 27 January, 1927, supersedes Order B. G. Bl. No. 243, of 9 August, 1926, as regards the control of wart disease [*Synchytrium endobioticum*] and enacts that the importation and transit of fresh potatoes from Denmark, Germany, France, Great Britain and Ireland, the Netherlands, Poland, Switzerland, and from the Republic of Czechoslovakia shall be subject to the control measures of the Federal law B. G. Bl. No. 215 of 28 July, 1926.

Transit of fresh potatoes through Austrian territory is only allowed on bills of lading of foreign origin and foreign destination, the goods being carried in covered sealed wagons and in closed undamaged wrappings. Any subsequent change of destination of such goods by the consignor, involving unloading in Austria, is therefore only permissible on production of the documents required by the law of 28 July, 1926. (*Bundesgesetzblatt für die Republik Österreich*, Wien, 1927, Jahrg. 1927, 10. Stück, S. 132).

Chile. — By Decree No. 19 of 20 January, 1927, the authorization regarding the importation of oranges and of mango fruits conferred on the ports of Iquique, Tocopilla, Antofagasta, Taltal and Chañaral in number 3 of Decree No. 560, of 21 September 1926, has been extended to Punta Arenas. (*Diario Oficial de la República de Chile*, Santiago, 1927, año LI, núm. 14,684, pág. 326).

Spain. — In consequence of damage produced by low temperatures in the provinces of Valencia, Castellón, Alicante and Murcia, and to avoid the exportation of fruit in bad condition, a Royal Order No. 14 of 7 January, 1927, subjects all oranges for export in the 1927 season to State inspection

" Juntas locales " have therefore been established in all orange-growing centres, and " Juntas de puerto " in the ports from which oranges are usually shipped (Valencia, Castellón, Cartagena, Burriana and Gandía). The former are under the presidency of the mayor of the commune and the latter of an agricultural officer (" Ingeniero Agrónomo ") in the provincial Service or his deputy ; producers and exporters of oranges are represented on both bodies.

The duty of the " Juntas locales " is to inspect daily the oranges packed loose in trucks for overland transport, and also to inspect in the storehouses, when necessary, oranges being packed for export overseas. The " Juntas de puerto " make a daily inspection of the oranges at the wharf, packed in cases, ready for export.

By virtue of the present Royal Order a " Junta Central " has also been established with administrative duties and responsible for imposing the proper penalties on persons who contravene the rules laid down in the Order itself. The chairman of the " Junta Central ", on which producers and exporters of oranges are represented, is the chief of the agricultural Service of the fourth administrative district.

The above regulations apply not only to oranges, but also to other-citrus fruits, such as lemons, mandarines, etc. (*Gaceta de Madrid*, Madrid, 1927, año CCLXVI, tomo I, núm. 8, págs 207-209).

*** By Royal Order No. 52 of 7 February, 1927, the custom-house of Puigcerdá (Gerona) was authorized to accept importations of potatoes, subject to observance of the rules given in the Royal Decree-Law of 20 June, 1924 (*Gaceta de Madrid*, Madrid, 1927, año CCLXVI, tomo I, núm. 45, pág. 962).

*** By Royal Order No. 102 of 21 February, 1927, the custom-house of Villagarcía de Arosa (Pontevedra), has been recently authorized to accept importations of potatoes, subject to observance of the rules contained in the Royal Decree-Law of 20 June, 1924. (*Gaceta de Madrid*, Madrid, 1927, año CCLCVI, tomo I, núm. 58, pág. 1235).

*** By Royal Order No. 64 of 2 March, 1927, the custom-house of Alicante has been authorized to accept importations of live plants or parts of plants, subject to the observance of the rules contained in the Royal Decree-Law of 20 June 1924. (*Gaceta de Madrid*, Madrid, 1927, año CCLXVI, tomo I, núm. 65, pág. 1420).

*** By Royal Order No. 80 of 16 March, 1927, the custom-house of La Línea de la Concepción has been authorized to accept importations of potatoes, subject to observance of the rules contained in the Royal Decree-Law of 20 June, 1924. (*Gaceta de Madrid*, Madrid, 1927, año CCLXVI, tomo I, núm. 81, pág. 1655).

United States of America. — By an Act of 9 February, 1927 a sum of 10,000,000 dollars has been appropriated to the Ministry of Agriculture for use in the eradication or control of the European corn borer [*Pyrausta nubilalis* Hb.]. (*An Act to provide for the eradication or control of the European corn borer.* [Public - No. 594 - 69th Congress] [H. R. 15649], 1927, 1 p.).

France. — By a Decree of 28 March, 1927, the Ministry of Agriculture has distributed among the twenty-seven phytopathological areas, into which the Republic is divided, the horticultural establishments, and those for vinegrowing and for the export of agricultural products of plant origin, inscribed for 1927 on the control lists of the Phytopathological Service, and has also nominated for 1927 the assistant inspectors and "contrôleurs" of the above Service. (*Journal Officiel de la République française*, Paris, 1927, LIX^e année, n^o 88, p. 4188-4190).

Italy. — In virtue of a Prefectorial Decree a compulsory Association ("Consorzio obbligatorio") has been formed for the control of the olive fly ("Dacus oleae") in the province of Ragusa for the duration of five years to include all olive growers in the province. (*Giornale di Agricoltura della Domenica*, Piacenza, 1927, anno XXXVII, n. 10, p. 89).

* * An Order of the prefect of the province of Padua makes compulsory in the Communes of Monselice, Tribano, Pernumia, Bagnoli di Sopra, S. Pietro Viminario, Pozzonovo and Arre, for all farmers the catching and destruction of adult cockchafer [Melolontha vulgaris L.], which are damaging vines in the above Communes. (*Il Gazzettino Agricolo*, Padova, 1927, anno V, n. 13, p. 1).

* * In view of severe damage done by the beetle *Anomala vitis* to the vine and to fruit plants in general — the peach excepted — in some Communes of the province of Verona (Vigasio, Isola della Scala, Bovolone, Cerea, Erbe, Sorgà, Oppiano, San Giovanni Lupatoto, Zevio and Buttapietra), an Association ("Consorzio") has been officially constituted, by Prefectorial Decree, embracing the Communes concerned, in order to render the capture and destruction of the insect obligatory. (*Il Lavoro d'Italia Agricolo*, Roma, 1927, anno I, n. 18, p. 2).

Mexico. — A special department called the "Oficina para la Defensa Agrícola", under the "Secretaría de Agricultura y Fomento" and in conjunction with the "Dirección General de Agricultura y Ganadería" has been established by a Presidential Decree of Mexico of 31 December, 1926. It will take over the functions entrusted by the Regulation of 19 February 1925 to the "Junta Nacional Directora de la Campaña contra la Langosta" together with others assigned to it by the above "Secretaría", in conformity with its powers under the existing "Ley de Plagas". (*Diario Oficial del Gobierno Constitucional de los Estados Unidos Mexicanos*, México, 1927, tomo XL, núm. 20, págs. 1-2).

* * A Presidential Decree of Mexico, dated 6 January, 1927, has annulled the Decree of 24 February, 1925, which established an additional charge of 1 "centavo" on postage and postal dues, the proceeds being used to meet the expenses of locust control. (*Diario Oficial del Gobierno Constitucional de los Estados Unidos Mexicanos*, México, 1927, tomo XL, núm. 8, pág. 7).

* * A Presidential Decree of Mexico of 12 January, 1927, has fixed the official rates for inspection of animals, seeds, fruits, plants and cereals, for

the year 1927. (*Diario Oficial del Gobierno Constitucional de los Estados Unidos Mexicanos*, México, 1927, tomo XII, núm. 9, págs. 3-4).

Sweden. — The Royal Decree No. 3 of 11 January, 1927 which, came into force on 15 January, 1927, contains various regulations to be observed by persons importing and re-exporting potatoes in view of Wart Disease [*Synchytrium endobioticum*]. (*Svensk Författningssamling*, Stockholm, 1927, Nr 3, sid. 7-8).

Tunis (Regency of). — By virtue of the Decree of 14 December, 1926, owners and occupiers of premises under every type of tenure, which are infested by rodents ("rats", "souris", "gerbilles" etc. [members of the sub-families *Murinae* and *Gerbillinae* of the family *Muridae*]) are compelled to effect their permanent extermination by proper methods and to provide themselves with all the materials necessary for the purpose.

In case of any serious attack the owners or occupiers must notify the local authority, and forthwith take the steps necessary for the extermination of the rodents, granting access to their property to the local authority and to its duly appointed vermin officials, conforming to the prescribed regulations and satisfying the demands for labour and for all materials required for the work of extermination.

Such operations undertaken by owners or occupiers on their own initiative, or when requested, on their own farms are at the charge of the persons interested; operations undertaken, on request, by owners or occupiers outside their own farms give the right to an indemnity fixed by the civil assessor ("Contrôleur civil") or by the head of the Office of Native Affairs.

In case of neglect of these regulations by owners or occupiers the work of extermination will be officially undertaken, under the administrative authority at the expense of the parties interested, without prejudice to penalties contemplated in the present decree. (*Journal Officiel Tunisien*, Tunis, 1927, 45^e année, n^o. 4, p. 66).

Uruguay. — A Decree, No. 189/917, dated 21 January, 1927, of the "Ministro de Industrias" includes the sparrow [*Passer domesticus*] among agricultural pests. (*Diario Oficial de la República Oriental del Uruguay*, Montevideo, 1927, tomo LXXXVI, núm. 6206, pág. 196-A).

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NOTES

Competition for a Remedy for the "mal del falchetto" of the Mulberry in Italy. — The "Ente Nazionale Serico" and the "Società Agraria di Lombardia" have announced a competition, with prizes amounting to 35 000 liras, for Italian citizens who submit, before 30 October 1928, a practical and efficacious system of controlling the "mal del falchetto" (root rot) of the mulberry.

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